CDC Recommendations for the Identification of Chronic Hepatitis C Virus Infection among Persons Born During 1945-1965

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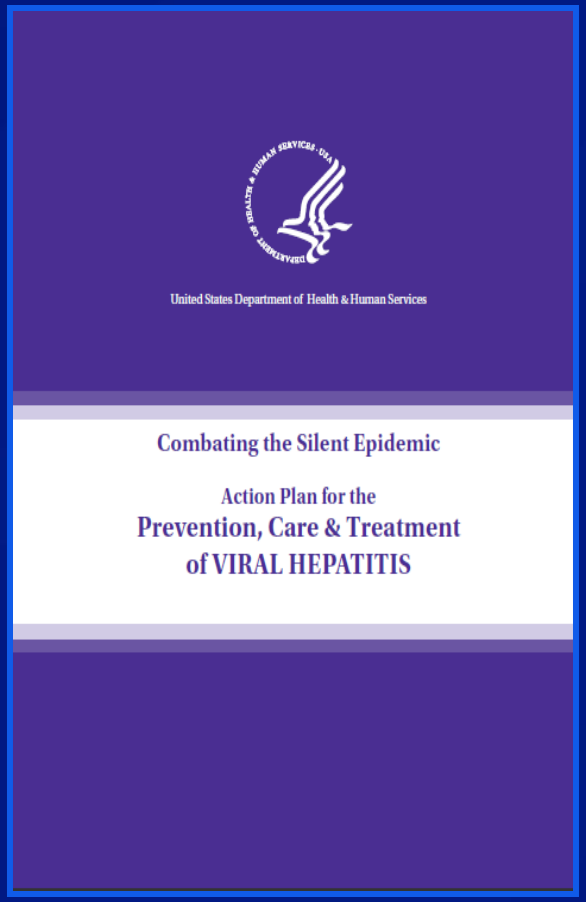
Agenda

- HHS Viral Hepatitis Action Plan
- HCV background
- Current recommendations and limitations
- Consideration of a prevalence-based HCV testing strategy
- GRADE-based evidence review
- Recommendations
- Implementation

HHS Viral Hepatitis Action Plan

- EDUCATING PROVIDERS AND COMMUNITIES TO REDUCE HEALTH DISPARITIES
- IMPROVING TESTING, CARE, AND TREATMENT TO PREVENT LIVER DISEASE AND CANCER
- STRENGTHENING SURVEILLANCE TO DETECT VIRAL HEPATITIS TRANSMISSION AND DISEASE
- ELIMINATING TRANSMISSION OF VACCINE-PREVENTABLE VIRAL HEPATITIS
- REDUCING VIRAL HEPATITIS CASES CAUSED BY DRUG-USE BEHAVIORS
- PROTECTING PATIENTS AND WORKERS FROM HEALTH-CARE-ASSOCIATED VIRAL HEPATITIS

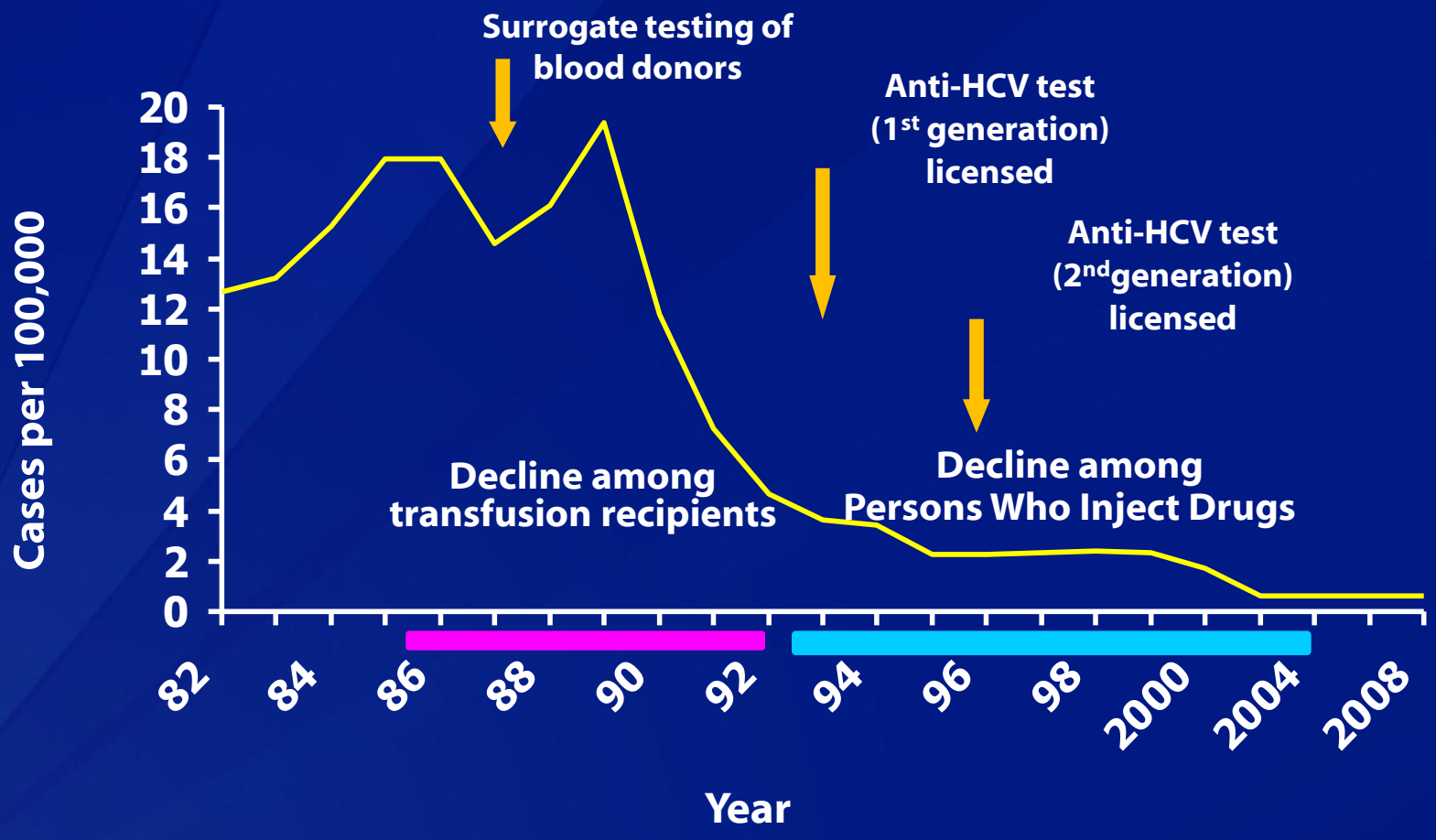


HCV Background

- **Anti-HCV 1.6% 4.1 M (3.4-4.9)**
  - Chronic HCV 1.3% 3.2M (**2.7-3.9**)
- **Leading cause of liver transplants and liver cancer (hepatocellular carcinoma)**
  - HCC fasting rising cause of cancer-related death
- **HCV-related deaths doubled from 1999-2007 to over 15,000/year**
  - Expected to increase to over 35,000/year without intervention

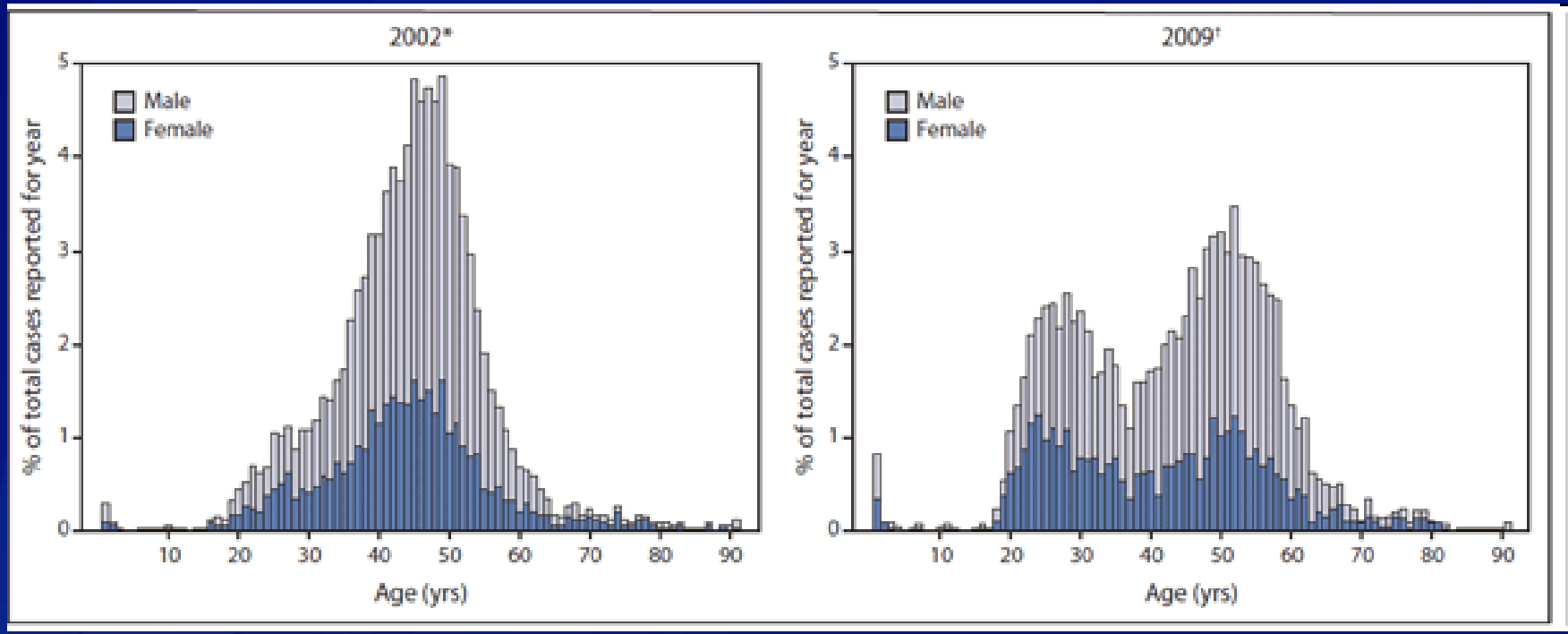
Armstrong et al. *Ann Intern Med*, 2006

Estimated Incidence of Acute Hepatitis C: United States, 1982 – 2009



Source: Sentinel Counties Study of Viral Hepatitis and State Disease Surveillance
CDC

Age Distribution of Confirmed Hepatitis C Cases- Massachusetts, 2002–2009*



- 1,925 reports of HCV among persons 15-24 yrs
- Cases from urban and urban areas; equal male:female, mostly white
- 72% past or current IDU, 84% injectors in past 12 mos
- Other states are reporting similar increases

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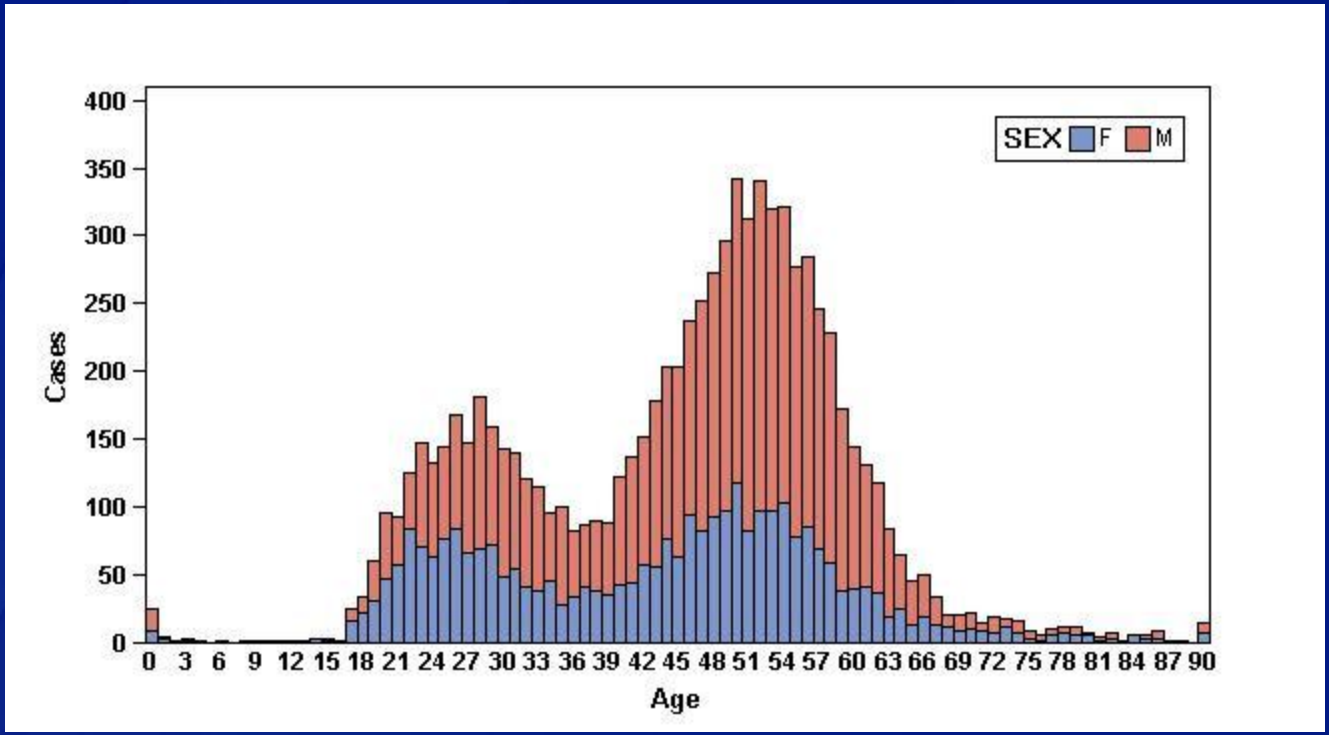
*MMWR 2011:60(17);537-541

Hepatitis Case Counts by Age
Pennsylvania, 2010



Trends observed in Massachusetts, Pennsylvania, Wisconsin, Michigan, and Ohio

- IDUs reported with HCV:
  - young (aged 20-29);
  - white
  - equally male: female
  - non-urban (suburban, rural)
  - previous ‘Oxycontin’ users
  - Difficult to locate for investigations

Persons Who Inject Drugs Are at Highest for HCV Infection

- High HCV prevalence [1] :~ 64 % (95% CI 63.4-64.7%)
- Accounts for 60-70% of new infections in US and many other countries
- IDU incidence is highest among new injectors
  - 18-27 HCV infections/100 persons years persons injecting < 2 years [2,3]
- HCV transmission has declined but remains substantial
  - In Baltimore, HCV incidence declined from 22/100 PYs (1988-89) to 7.8 (2005-2008) [4]
  - In Seattle, HCV + prevalence fell from 68% (1994) to 32% (2004) [5]
  - Prevention requires a combination of strategies [6]
- Reinfection incidence after HCV clearance 1.8-47/100 PYs. [7-15]

1

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Hagan, et al, Int J Drug Policy 2007; [2] Hagan et al, Amer J Public Health 2001.; [3] Lucidarme, et al, Epid and Infect 2004; [5] Mehta, J Infect Dis, 2011; [5]Burt et al, J Urban Health 2007. [6] Burt, et al Drug Alcohol Dependence 2009.); [7] Mehta SH. Lancet; [8] Grebely J Hepatology 2006; [9] Micallef JM J Viral Hepat 2007; [10]Aitken CK. Hepatology 2008; [11]Van de Laar TJ. J Hepatol 2009; [12]Page K. J Infect Dis 2009; [13]Osborn WO. Gasttroenterology 2009; [14] Currie SL. Drig Alcohol Depend 2008; [15] Grebely J Hepatology 2012

Healthcare associated HCV Transmission

- 40% of HCV infections globally [1]
- Countries of high (>3%) prevalence: Major transmission mode[1]
  - Examples: Egypt [2,3] ; Pakistan[4]; Mongolia [5]
  - Injections are common and practices difficult to change
- Countries of low HCV prevalence –e.g. United States
  - Before early 1990s, a larger attributable risk before HCV discovery and adoption of universal precautions
  - Continues to cause disease outbreaks- 16 reported to CDC (1998-2008) [6]
  - An independent risk factor for persons > 55 yrs. with acute HCV [7]
  - Diverse settings associated with transmission (e.g., dialysis, anesthesia, chemotherapy)

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[1] Ezzati M et al. *Lancet. 2002;* [2] *Guerra J et al. J Viral Hepat 2012;* [3] *Miller FD, Abu-Raddad LJ. Proc Natl Acad Sci USA* 2010 Aug 17 [4] *Bosan A et al. J Pak Med Assoc* 2010; [5] Baatarkhuu O. et al*. Liver Int 2008.* [6]Thompson ND et al. Ann Int Med 2009; [7] Perz JF et al. Hepatology 2012

Other Modes of HCV Transmission

- Non-injecting drug use- (e.g. cocaine); 0-17% HCV+ [1]
- Incarcerated persons
  - 15-35% HCV+; reflects pre-incarceration exposure [2]
  - Incidence ~ 0.75/100 person years while incarcerated [3]
- Infants born to HCV infected mothers [4]
  - ~4% among HCV+ mothers; 25% among HCV/HIV + mothers
  - No protective interventions
- Sexual transmission
  - Heterosexual- 14% of reported acute HCV cases in US [5]
    - Transmission rare among long term discordant couples [6]
  - HIV+ MSM: HCV incidence is high (6.08/1000 person-years)[7,8]
- Household contact: Two fold increased risk [9]
- Health care workers- 3% of reported acute HCV cases in US [5]

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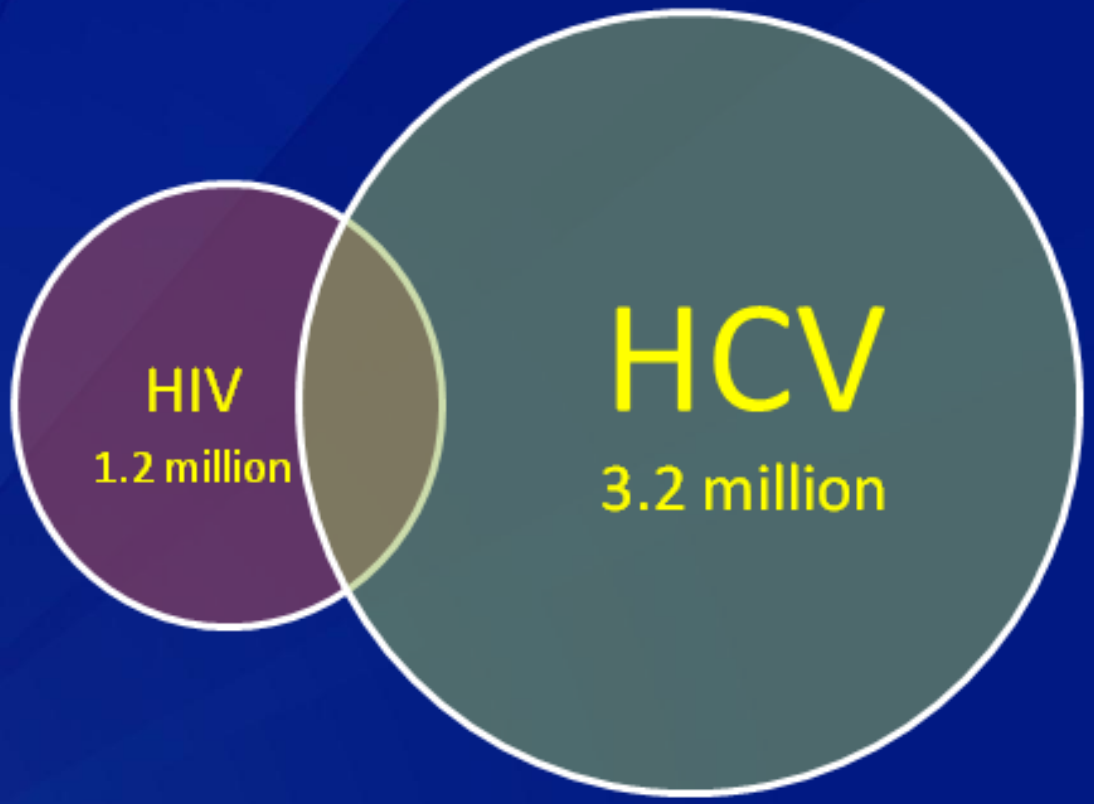
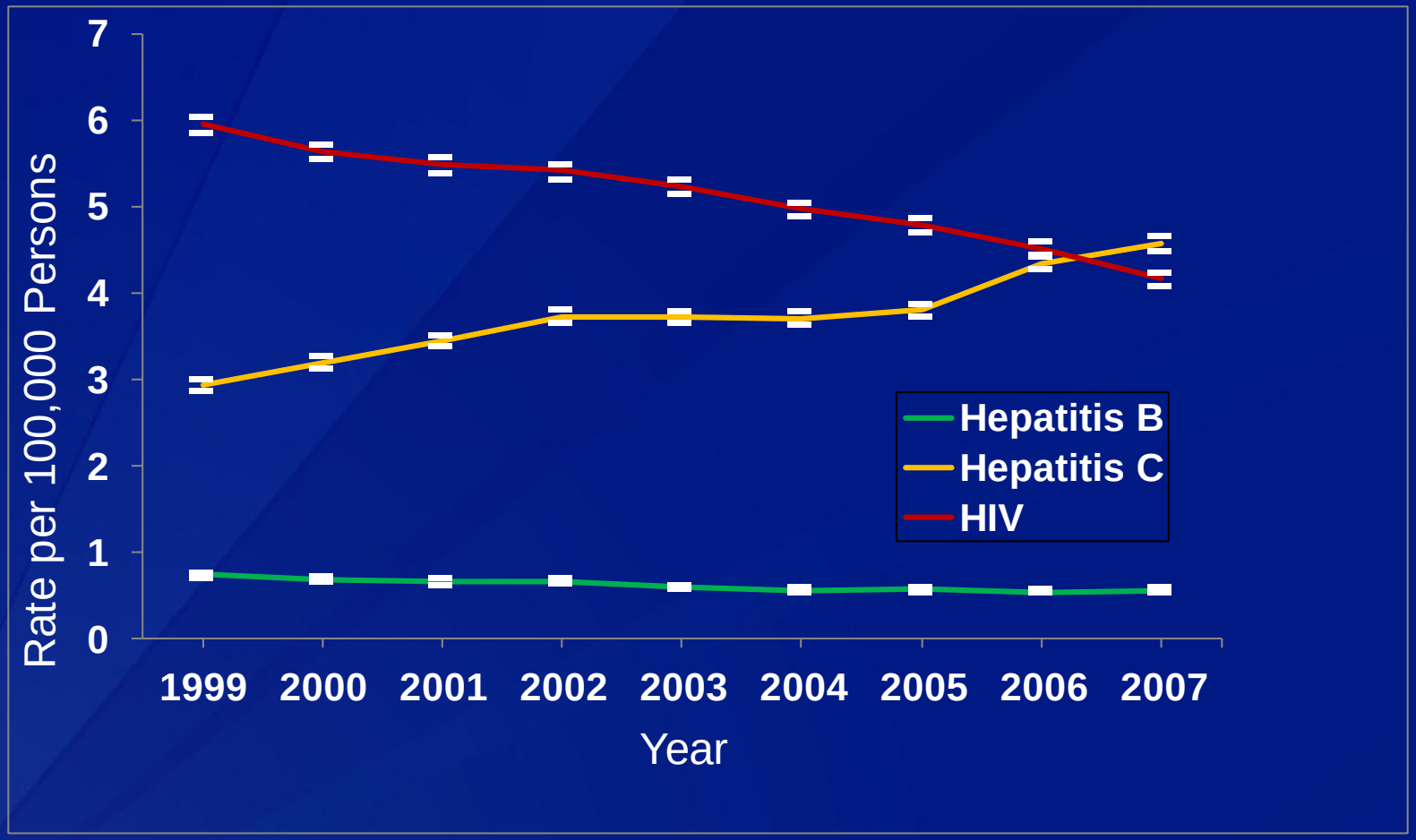
[1]Scheinmann, et al , *Drug and Alcohol Dependence, 2006;* [2] *Weinbaum MMWR 2003;* [3] Gough et al. BMC Public Health 2010, [4] *Mast , et al, J Infect Dis, 2005.;* [5] *Williams IT,* Arch Intern Med. 2011 ; [6] Marincovich B,. *Sex Transm Infect.* Apr 2003; [7] Yaphe S; Sex Transm Inf 2012 Aug 3; [8] *Bottieau, et al Eurosurveillance 2010.)* [9] *Ackerman Z, J Viral Hepat 2000.*

HCV in the Context of HIV in the US



Age-Adjusted Rates of Mortality: Hepatitis B, Hepatitis C, and HIV, United States, 1999–2007



In 2007, > 70% of registered deaths in HCV-infected were aged 45-64 years old

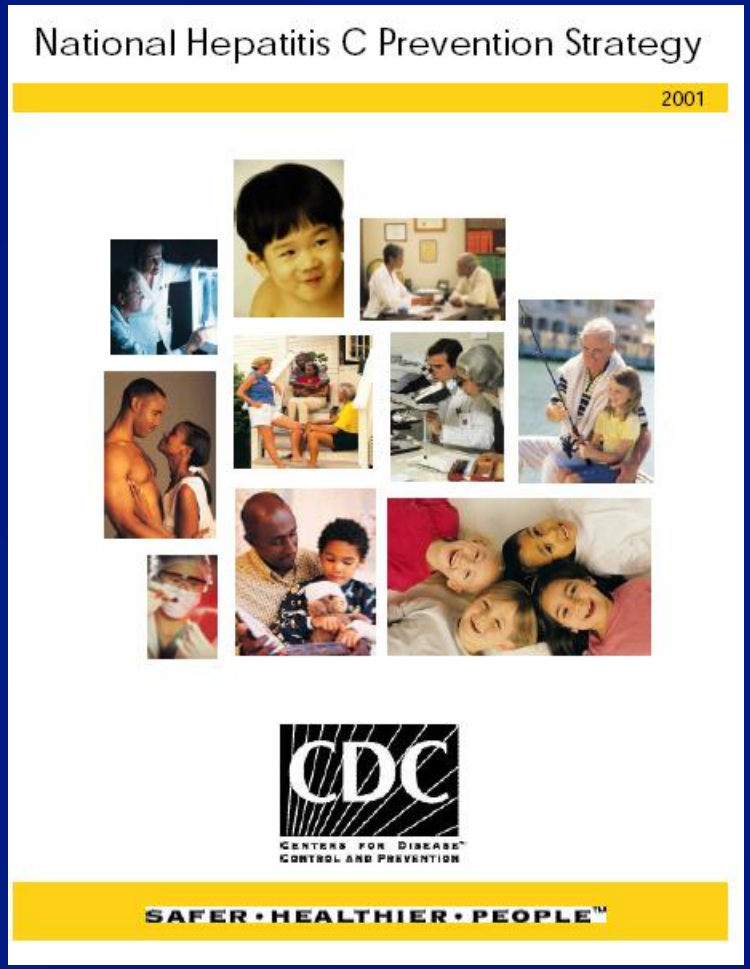
HCV Therapy Can Eliminate HCV Infection

- Therapy goal is HCV clearance known as sustained virologic response (SVR) [1]
- HCV therapy is effective but with risk for serious adverse events (SAE) of 5-10%
- Recent FDA approval of new medications has improved treatment effectiveness from 40% to 75% SVR while shortening length of treatment
- At least 20 drugs are in phase II/III trials some of which have 90% effectiveness with fewer SAEs

[1] Ghany M, et al Hepatology 2009;

CDC Recommendations Based on Risk and Medical Indications (1998)

- Past or present injection drug use
- Signs of liver disease (persistently elevated ALT)
- Received blood/organs prior to June 1992
- Received blood products made prior to 1987
- Ever on chronic hemodialysis
- Infants of HCV-infected mothers
- HIV infection



MMWR 1998;47 (No. RR-19)

Limitations of Risk- and Medical Indication-based Testing

- **Barriers to HCV testing** [1-4]
  - Physician knowledge and experience
  - Patient recall of long-past risk behavior and concerns of stigma
- **ALT screening misses more than 50% of chronic cases** [5]
- **45%-85% of infected persons are unidentified** [6-8]

1. Shehab TM. *J Viral Hepat,* 2001. 2. Shehab TM, et al. *Am J Gastroenterol,* 2002. 3. Serrante JM, et al. *Fam Med,* 2008. 4. Shehab TM, et al. *Hepatology, 1999.* 5. Smith, et al. AASLD, San Francisco, CA. 2011. 6. Roblin, et al. *Am J Man Care* 2011. 7. Spradling, et al., *Hepatology,* 2012. 8.Southern, et al., *J Viral Hepat,* 2010.

CONSIDERATION OF A PREVALENCE-BASED BIRTH COHORT HCV TESTING STRATEGY

Consideration of a Prevalence-based Strategy To Focus Testing on Persons Born 1945-1965

- Persons in the 1945-1965 birth cohort are 4 times more likely to be anti-HCV+ than other adults
  - Anti-HCV prevalence in the birth cohort = 3.25% [1]
- Represents 76.5% of all chronic HCV infections
  - 68% have medical insurance
  - Infected population has modifiable disease co-factors
    - 58% consume ≥ 2 alcoholic drinks/day
    - 80% lack Hep A/B vaccination
- Represents 73% of all HCV-associated mortality

1. Smith, et al. American Association for the Study of Liver Disease Liver Meeting, San Francisco, CA. 2011.

GRADING THE EVIDENCE FOR HCV TESTING OF PERSONS BORN 1945-1965

Methods

- **GRADE framework**
  - Assess quality of the evidence for critical patient-important outcomes
  - Determine the strength of the recommendations
  - Methodology adopted by over 60 organizations including WHO, federal advisory committees (e.g., ACIP), and the Cochrane Collaborative

Participation of External Consultants

- **HCV Birth Cohort Testing Recommendations Work Group**
  - Participation through teleconferences, GRADE workshop, consultation
  - Clinicians, professional societies (AMA, AASLD, ACP, AAFP), academicians, advocacy representatives (NVHR), state and local health departments, other federal agencies (AHRQ, SAMHSA, NIH, VA)

- **Peer Review**
  - Oct. – Nov. 2011
  - Three independent reviewers
  - Comments were addressed and posted externally

- **Public Comment**
  - Feb. – March 2012
  - Draft posted on FDMS.gov
  - Comments posted externally and draft modified according

http://www.cdc.gov/hepatitis/PeerReviews/HepC45-65-pr.htm

Evidence Review

- **Staged review**
  - 1st stage: select targeted birth cohort
  - 2nd stage: evaluate the benefits and harms of testing persons born 1945 – 1965 on patient-important outcomes
    - Identify previously published systematic reviews
    - Conduct meta-analyses to fill gaps in research

Key Outcomes of Evidence Review

Harms

- **Effect of protease inhibitors on Serious Adverse Events**
  - There are serious adverse events associated with Boceprevir- and Telaprevir-based regiments that lead to discontinuation of treatment (RR 1.34, 95% CI 0.95, 1.87).

- **Insurability, HCV transmission, false positives, false negatives**
  - No studies evaluated these potential harms related to HCV testing and the birth cohort

Key Outcomes of Evidence Review

Benefits

- **Effect of Telaprevir- and Boceprevir-based therapies on sustained viral response (SVR)**
  - Protease inhibitor-based treatment regimens increase the possibility of achieving SVR by 50% (RR 0.53, 95% CI 0.47, 0.6)
- **SVR and HCC**
  - Treatment-related SVR associated with a reduced risk of HCC of 75% (0.24; 95% CI=0.18, 0.31)
- **SVR and all-cause mortality**
  - Treatment-related SVR associated with reduced risk of all-cause mortality among persons diagnosed with HCV infection of 50% (RR=0.46; 95% CI=0.41, 0.51)
- **Effect of clinician-directed intervention on alcohol use**
  - Meta-analysis found decline of alcohol use >38% for >1 year follow-up; indirect evidence for HCV-infected populations

Centers for Disease Control and Prevention
MMWR
Morbidity and Mortality Weekly Report
Recommendations and Reports / Vol. 61 / No. 4
August 17, 2012

Recommendations for the Identification of Chronic Hepatitis C Virus Infection Among Persons Born During 1945–1965

Draft CDC Recommendations

- In addition to testing adults at risk for HCV infection, CDC recommends that:
  - **Adults born during 1945 through 1965 should receive one-time testing for HCV without prior ascertainment of HCV risk factor. *(strong recommendation, moderate quality of evidence)***
  - **All persons with identified HCV infection should receive a brief alcohol screening and intervention as appropriate, followed by referral to appropriate care and treatment services for HCV infection and related conditions as indicated. *(strong recommendation, moderate quality of evidence)***

CDC Recommendations for Prevention and Control of HCV infection and Chronic Diseases 2012

- Adults born during 1945–1965
- HIV-infected patients
- Persons who ever injected illegal drugs
- Persons who were ever on chronic (long-term) hemodialysis
- Persons who received clotting factor concentrates produced before 1987
- Prior recipients of transfusions or organ transplants before July 1992
- Persons with persistently abnormal alanine aminotransferase levels
- Health care, emergency medical, and public safety workers after needle sticks, sharps, or mucosal exposures to HCV-positive blood
- Children born to HCV-positive women

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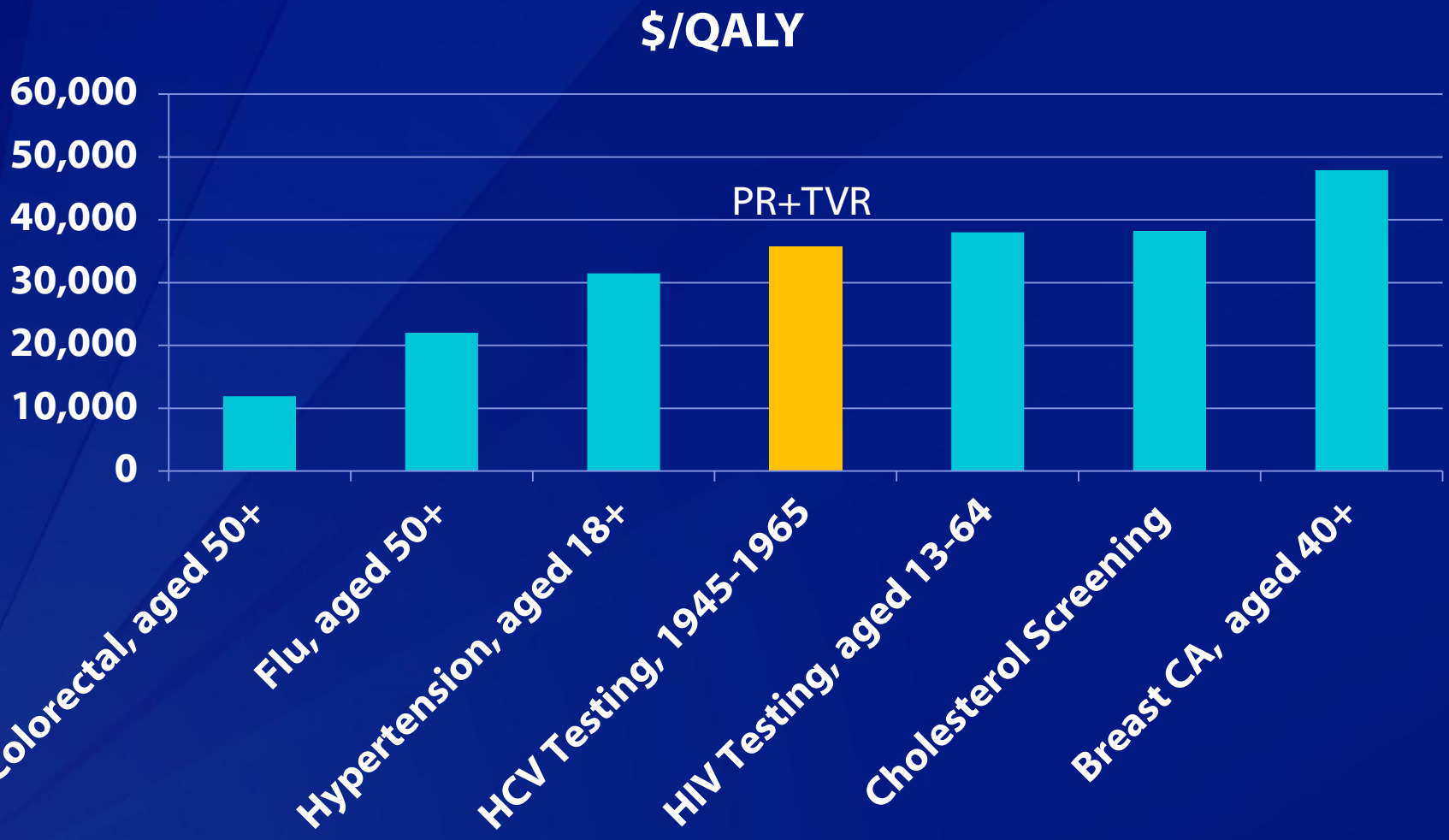
Health and Cost Impact of HCV Testing of Persons Born 1945-1965

Outcome	Birth Cohort Testing with DAA Therapy
	PegIFN-Riba + TVR
Additional Identified Cases	809,000
Cirrhosis cases averted	203,000
Decompensated cirrhosis cases averted	74,000
Hepatocellular carcinoma cases averted	47,000
Transplants averted	15,000
Deaths from hepatitis C virus averted	121,000
Medical costs averted	$2.5b
Cost/QALY gained (Societal)	$35,700

•Rein DB, Smith BD, et al. The cost-effectiveness of birth year-based and universal hepatitis C screening and indicated treatment in the United States. *Annals of Internal Medicine,* 2011.

Comparison of HCV Cost Effectiveness with other Routine Preventive Services



http://www.prevent.org/National-Commission-on-Prevention-Priorities/Rankings-of-Preventive-Services-for-the-US-Population.aspx

IMPLEMENTATION

Groundwork for Implementing CDC Recommendation for HCV Testing of Persons Born 1945-1965

- Launch *KNOW MORE HEPATITIS* campaign for public and providers
- Expand capacity for HCV testing and care referral (e.g., FY 12 PPHF)
  - $5.0M available; > 100 applications
- Enhance surveillance to monitor implementation and impact
- Collaborate with other federal agencies to support testing (e.g., AHRQ, HRSA, CMS)
- Engage stakeholders
  - Professional societies (e.g., IDSA, ACP, AASLD, CSTE, AMA leadership)
  - Providers (Heath systems, insurers, laboratories)


MILLIONS OF AMERICANS HAVE HEPATITIS C.
MOST DON'T KNOW IT.
TALK TO YOUR DOCTOR ABOUT GETTING TESTED.
EARLY DETECTION CAN SAVE LIVES.
CDC
www.cdc.gov/knowmorehepatitis
KNOW MORE HEPATITIS
JCDecaux

National Hepatitis Testing Day

May 19

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Learn About Hepatitis Testing Events in May

ZIP code

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City

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State

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Search Reset View All Events

Register Your Event

Help us build our hepatitis testing resources and fill in the map. Submit your event.

Register Your Event

Spread the Word about Hepatitis Testing Day

Add buttons and badges to your Web and social networking sites to promote Hepatitis Testing Day - **Coming Soon!**

Find Hepatitis Testing Year Round Near You

Locate organizations offering Hepatitis testing and additional services including vaccines and treatment in the NPIN Organizations Database.

Are You at Risk for Hepatitis?

We can help you find out with CDC's assessment tool - **Coming Soon!**

Get Connected

Facebook Twitter

Friend us on Facebook or follow us on Twitter.

About Hepatitis Testing Day

May 19, 2012 is the **first ever** national Hepatitis Testing Day. It is a day for people at risk to be tested, and for health care providers to educate patients about chronic viral hepatitis and testing. Millions of Americans have chronic hepatitis; most of them do not know they are infected.

This new national Hepatitis Testing Day in the United States is part of an educational initiative related to CDC's Know More Hepatitis campaign and the U.S. Department of Health & Human Services' Combating the Silent Epidemic of Viral Hepatitis: Action Plan for the Prevention, Care & Treatment of Viral Hepatitis.

Brought to You By

KNOW MORE HEPATITIS™

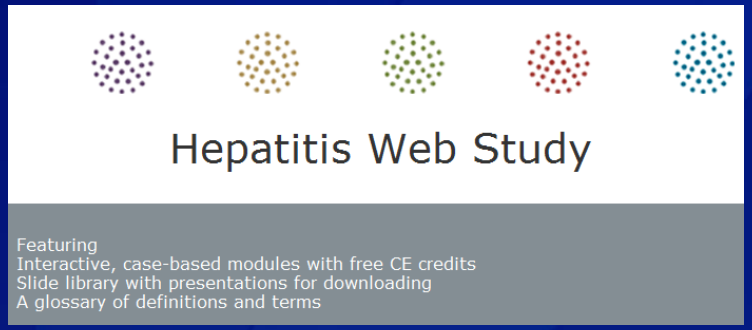
CDC

NPIN

Train providers in implementing HCV testing, providing care and making decisions regarding HCV therapy

- Target providers- primary care, ID, hepatology, GI
  - Primary care organizations (ACP, AAFP, ACOG, AMA, NACHC) physicians/staff
  - Clinical Specialists (IDSA, AASLD, AGA)
  - Publically funded health programs (CHC, Medicaid/Medicare, military)
  - Public health (preventive health services, HIV/STI)
- Actions
  - Distance learning
  - Presentations at state/local and national professional society meetings - VH specific or in integrated format
  - Model curriculum

CDC-Sponsored Viral Hepatitis Training for Health Professionals



- University of Washington
  - CME/CNE case studies
  - Hepatitis C Screening, Management & Care Primer

- University of Alabama, Birmingham
  - Webinars
  - Curriculum development for medical education

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Build Capacity for HCV Testing and Linkage to Care

- $5.0M to support HCV testing and linkage to care in 2011
  - Priorities
    - Settings that provide services to persons who inject drugs (PWID)
    - Primary care settings
    - Other (e.g, HIV, GI, corrections)
  - Implement telemedicine models of care (i.e., Project ECHO) in primary care settings to improve care and treatment practices

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Establish HCV Testing as a Routine Clinical Service

- **Federal collaborations**
  - AHRQ- support update of USPSTF statement
  - HRSA- quality improvement effort
  - CMS- provider education within Medicare and Medicaid
- **Public health integration plan – ASTHO**
    - Publically funded health programs (CHC, CMS, Ryan White)
    - Preventive health services (e.g., HIV/STI, addiction)

Monitor Implementation and Impact on HCV Transmission and Disease

- Chronic HCV reporting
- Review large clinical data sets (e.g., CMS data)
- Vital records – mortality trends
- Observe the care of ~10,000 patients with HCV CheCS
- National surveys
  - NHANES
  - NHIS

Evaluate and Improve Approaches to HCV Testing and Linkage to Care and Treatment

- Study implementation of HCV testing in diverse settings
- Replicate care models (Project ECHO)
- Evaluate HCV counseling messages and prepare counseling guide
- Begin GRADE-based review to complete update of HCV testing recommendations
  - Current (IDU, ALT)
  - Other (Sexual, HIV+ MSM, foreign born)

Thank you!

For more information please contact Centers for Disease Control and Prevention

1600 Clifton Road NE, Atlanta, GA 30333
Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
E-mail: cdcinfo@cdc.gov Web: www.cdc.gov